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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,998	10/29/2003	Toshio Yamada	117636	5318

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EXAMINER

MAYES, MELVIN C

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 01/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

LD

Office Action Summary	Application No. 10/694,998	Applicant(s) YAMADA ET AL.	
	Examiner Melvin Curtis Mayes	Art Unit 1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-18 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/2/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

(1)

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(2)

Claims 1-3, 7, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Dimick et al. 4,509,966.

Dimick et al. disclose a method of making a monolith filter having porous plugs and for use in the exhaust systems of diesel engines comprising: forming an open- ended ceramic monolith (honeycomb); inserting actual plugs into the inlet end face openings of the outlet channels; and firing the plugs in place to fuse the plugs to their adjacent walls. The ceramic material for the porous plugs is the same as that used in the fabrication of the wall-flow monolith element (col. 5, lines 3-45).

(3)

Claims 1, 7, 11 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Wong 6,630,221.

Wong discloses a method of reinforcing or stiffening a honeycomb structure comprising: inserting into select hollow interior portions (cells) of the honeycomb preformed sag-resistant nucleus-forming monolithic composite plugs of incompatible in situ-expandable thermoplastic particles; and heating the composite to cause expansion of the thermoplastic particles to achieve a faultless interface with the wall of the interior portions (cells). The plugs can be of hexagonal shape corresponding to the shape of the cell or of cylindrical or rectangular shape (col. 15, lines 52-67, col. 21, line 42 – col. 22, line 15).

(4)

Claims 1, 2, 7, 9, 11, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 3-74512 Abstract.

JP 3-745512 discloses a method of making a honeycomb filter with built-in heater comprising: forming a plug portion 22 of cylindrical shape on a wire; inserting the plug portion into a cell which is not filled with resin; dipping the honeycomb filter in a silica; and injecting heat resistant cement between the plug portion and the cell wall. The plug portion is made of heat-resistant cement such as silica. As shown in the Figures 1-3, the plug portion has a convex outer surface with respect to the end face of the honeycomb and the plug portion can have a cylindrical or rectangular shape. As shown in Figure 9, the plug portions are inserted in a plurality of the cells.

Claim Rejections - 35 USC § 103

(5)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

(6)

Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dimick et al. '966 as applied to claim 1 above, and further in view of Ishihara et al. 6,800,107.

Dimick disclose that the porous plugs also serve as a filter means (col. 5, lines 46-56).

Ishihara et al. teach that in a ceramic exhaust gas purifying filter for internal combustion engines, the honeycomb and plugs may be made of ceramic material such as cordierite, mullite, spinal or the like and the honeycomb and plugs can be provided with a catalyst supported thereon for burning particulate matter that has been captured (col. 3, lines 7-14).

It would have been obvious to one of ordinary skill in the art to have modified the method of Dimick et al. for making a ceramic monolith filter having porous plugs and for use in the exhaust systems of diesel engines by providing the ceramic of the honeycomb monolith and plugs of cordierite or mullite, as claimed in Claim 14, as taught by Ishihara et al. as ceramic used to make the honeycomb and plugs of a ceramic exhaust gas purifying filter for internal combustion engines.

It would have been obvious to one of ordinary skill in the art to have modified the method of Dimick et al. for making a ceramic monolith filter having porous plugs and for use in the exhaust systems of diesel engines by providing the honeycomb monolith and porous plugs with catalyst supported thereon, as claimed in Claims 15 and 16, as taught by Ishihara et al., to provide catalyst for burning particulate matter that has been captured. Providing the porous plugs with catalyst in addition to the honeycomb monolith would have been obvious to one of ordinary skill in the art, as taught by Ishihara et al.

(7)

Claims 1-5, 7, 9, 10, 15, 16 and 18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 2002-309922.

JP 2002-309922 discloses a method of making a diesel particulate filter comprising: inserting, into cells at the upstream end of the honeycomb, plug parts 25 having conical protrusions 25a protruding from the end face of the cells; and fixing the plugs to the upstream ends. The protrusions 25a support an oxidation catalyst (Abstract and computer translation).

Further, providing the plug parts as unfired molded plugs or as fired molded plugs for fixing (bonding) to the ends of the cells, would have been obvious to one of ordinary skill in the art for fixing plug parts to a honeycomb for a diesel particulate filter.

(8)

Claims 2, 3, 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-309922 as applied to claim 1 above, and further in view of Nakamoto et al. 4,718,926.

JP '922 discloses that the honeycomb diesel filter comprises cordierite.

Nakamoto et al. teach that the plugs of a honeycomb diesel filter are comprised of the same ceramic material as that used to make the honeycomb structure. Nakano et al. further teach that the plugs are baked, either after the honeycomb is baked or baked with the honeycomb (col. 2, lines 33 col. 3, line 20).

It would have been obvious to one of ordinary skill in the art to have modified the method of JP '922 for making a ceramic diesel particulate filter by providing the plug parts are unfired molded plugs and fixing the plugs to the cells by baking, as Nakamoto et al. teach that plug of a ceramic honeycomb diesel filter as also comprised of ceramic material as can be baked

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with the honeycomb. Providing the plugs of the same ceramic material as the honeycomb, such as cordierite, as claimed in Claims 14 and 17, would have been obvious to one of ordinary skill in the art, as Nakamoto et al. teach that the plugs are comprised of the same ceramic material as that used to make the honeycomb diesel filter, and JP '922 teaches that honeycomb diesel filter comprises cordierite.

(9)

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-309922 in view of Nakamoto et al. as applied to claim 14 above, and further in view of Ogawa et al. 4,559,193.

Ogawa et al. teach that an improved method of sealing open ends of channels of a ceramic honeycomb body used for purifying harmful gases such as automobile exhaust gas is to first apply a suitable sealing material slurry-form into the open ends and then firing the honeycomb body such that the sealing material is twice applied, firstly in the form of a slurry then in the form of a green body. The sealing slurry can be of the same ingredients as the green body (col. 2, line 64 – col. 3, line 25).

It would have been obvious to one of ordinary skill in the art to have modified the method of the references as combined by fixing (bonding) the plug parts to the honeycomb by first applying a sealing material into the cells before the plug parts then firing the honeycomb and plug parts, as taught by Ogawa et al., as an improved method of sealing the open ends of channels of ceramic honeycomb body used for purifying harmful gases such as automobile exhaust gas. Providing the sealing slurry of the same ceramic material as the plug parts and the honeycomb would have been obvious to one of ordinary skill in the art, as taught by Ogawa et al.

(10)

Claims 1, 6, 7, 11 and 18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Castro et al. 5,116,689.

Castro et al. disclose a method of reinforcing a honeycomb core comprising: inserting cylindrical coiled inserts into cells in selected portions of the honeycomb core; and bonding the coils to the cell walls by diffusion bonding or brazing.

Further, by inserting coiled inserts into the cells, plugging members of predetermined shape and having through slots are obviously inserted into the cells.

Allowable Subject Matter

(11)

Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

(12)

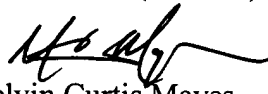
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(13)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvin Curtis Mayes whose telephone number is 571-272-1234. The examiner can normally be reached on Mon-Fri 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on 571-272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Melvin Curtis Mayes
Primary Examiner
Art Unit 1734

MCM
January 4, 2005